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ROYAL ASTRONOMICAL SOCIETY.

VOL. XIV. *November* 11, 1853. No. 1.

G. B. AIRY, Esq., President, in the Chair.

Robert Brewin, Jun., Esq., Birstall Hall, Leicestershire;
Benj. Dennison Naylor, Esq., Altrincham, Cheshire;
were balloted for and duly elected Fellows of the Society.

Extract of a Letter from Professor Hansen to the Astronomer Royal, dated 1853, *Nov.* 4.

"The work on the Lunar Tables has been greatly advanced during this last year. In the course of a fortnight we shall arrive at the definitive corrections of the elliptic elements for the present epoch, as well as the coefficients of the disturbances which depend on the sun's parallax and on the ellipticity of the earth; and I count upon an excellent agreement between the Observations and the Tables. For greater security these corrections are separately based on the Greenwich and the Dorpat observations; and, as far as I can foresee at present, a very good agreement will in this respect also be presented. From the discussion of these observations, however, it results that something yet remains depending on the difference of longitude between Greenwich and Dorpat. I have to-day written to Struve on this subject. The work which yet remains is the settling of the Epoch of the Moon's motion for remote times for the definitive determination of the mean motion. I hope, in the space of a year, to be quite ready with the Lunar Tables.

"The Solar Tables are at last printed."

Observations of Comet II., 1853, *made at the Royal Observatory, Cape of Good Hope.* By Thomas Maclear, Esq.

When the comet was detected shortly after nightfall on the 1st of May, the tail appeared to be about 3½ or 4 degrees in length, and singularly curved or convex towards the south, near the head, conveying to the imagination the impression of a parabola, of which

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the curve on the south side of the axis only was visible. The outline of the parabolic shaped head was sharply defined, and it seemed to be immersed in a very delicate coma or halo, which subsequently increased in dimensions.

In the direction of the axes there was no cometary matter, nor within the curve anywhere up to the nucleus; and the edge of the tail adjacent to the axis appeared to be sharper than the opposite edge.

In brilliancy, the nucleus might be safely taken equal to that of a star of the fifth magnitude; but, under high powers, the pungency of the light vanished, and the image spread fan-shaped in the direction of the head. It remained pretty bright until the 9th of May.

With respect to the observations, they were made by myself with the 8½-feet equatoreal and spider-line micrometer, armed with the power 123; and, in general, the telescope was moved by the "driving clock," when the star and comet were simultaneously visible in the field.

It may be proper here to state, that a single micrometer measure for difference in right ascension seems to be at least six times more accurate than the difference by time transits over a single wire, where the objects are pretty well defined; and perhaps twenty times more accurate when one of them is a nebulous blotch, whose centre has to be estimated. There is a strong instance of this on the 7th of June.

For several days before its final disappearance, the comet resembled an oval-shaped nebula, slightly condensed in the middle. The last observation was on the 11th of June; the following three nights were clouded; afterwards it could not be detected.

The first and second columns give the date and Cape mean time of observation. The third column contains the observed differences in right ascension, corrected for refraction, between the comet and stars compared with it when derived from transits; or, when observed in terms of the micrometer-screw, the arc value reduced to time and multiplied by the sine of the N.P.D. of the middle point between the comet and the star. The fourth column gives the number of partial measures. The fifth gives the arc values, corrected for refraction, of the observed differences in N.P.D.; and the sixth gives the number of partial measures.

The signs + and —, prefixed to the differences in columns three and five, imply that the quantities are to be added to or subtracted from the R.A. and N.P.D. of the stars to obtain the R.A. and N.P.D. of the comet.

The seventh column gives the conventional numbers of the stars for reference. Their approximate places derived from the equatoreal circles, will be found on the last page sufficiently near for identification. Their correct positions will be observed at the proper season with the meridian instruments.

Royal Observatory, Cape of Good Hope,
Aug. 13, 1853.

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1853.	Cape Mean Time.	Difference in R.A.	No. of Obs. in R.A.	Difference in N.P.D.	No. of Obs. in N.P.D.	No. of Star.	
	h m s	m s		′ ″			
May 1	7 46 28·10	......	...	+ 2 50·24	2	1	
	7 56 37·29	−1 46·532	2	......	...	1	*t*
	8 6 17·36	......	...	+ 3 38·17	2	1	
	8 26 37·32	......	...	+ 4 25·86	5	1	
	8 37 17·28	0 34·479	1	......	...	1	*t*
3	7 19 49·87	......	...	+ 5 12·82	3	2	
	7 42 23·62	1 12·658	4	......	...	2	*t*
	7 42 23·62	1 34·739	4	......	...	3	*t*
	7 42 23·62	1 53·530	4	......	...	4	*t*
	7 56 28·52	......	...	+ 5 25·34	...	2	
	8 10 29·46	0 50·447	3	......	...	2	*t*
	9 11 36·35	−0 1·623	8	......	...	2	*t*
	9 18 32·71	......	...	+ 5 41·45	...	2	
4	6 35 11·59	......	...	− 4 56·02	2	5	
	6 57 18·62	+0 34·348	9	......	...	5	*t*
	6 57 18·62	−0 17·970	9	......	...	6	*t*
	7 14 42·60	......	...	− 3 19·55	2	6	
	7 22 54·73	−0 3·370	9	......	...	6	*t*
	7 35 59·60	......	...	− 3 20·31	2	6	
	8 8 11·72	+0 25·340	5	......	...	6	*t*
	8 30 21·54	......	...	− 3 19·85	3	6	
	8 44 49·83	+0 44·486	3	......	...	6	*t*
	8 10 53·45	−1 22·002	3	......	...	7	*t*
	8 30 21·54	......	...	− 1 4·42	3	7	
	8 50 28·63	−0 58·841	6	......	...	7	*t*
	9 13 5·16	......	...	− 1 7·67	2	7	
5	7 0 27·44	......	...	+11 28·42	1	8	
	7 37 17·49	−7 29·912	1	......	...	8	*t*
7	7 3 43·40	+1 14·379	4	......	...	9	*t*
	7 19 37·18	......	...	−10 13·21	2	9	
	7 36 1·49	+1 22·408	3	......	...	9	*t*
	8 3 37·29	......	...	−10 23·67	3	9	
	9 3 57·54	......	...	−10 31·27	2	9	
	9 11 16·84	+1 47·781	1	......	...	9	*t*
	7 3 43·40	−0 46·079	4	......	...	10	*t*

Clouded on the 2d.
May 5. Owing to clouds these observations only could be obtained.
7. Angle of position of comet's tail, 118° 40′.
No. 10 is in the comet's tail.

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1853.	Cape Mean Time.	Difference in R.A.	No. of Obs. in R.A.	Difference in N.P.D.	No. of Obs. in N.P.D.	No. of Star.	
	h m s	m s		′ ″			
May 7	7 25 34·21	......	...	− 7 36·70	2	10	
	7 36 1·49	−0 37·838	3	......	...	10	*t*
	8 35 1·80	......	...	− 7 52·92	2	10	
	9 11 16·84	−0 12·661	1	......	...	10	*t*
8	6 23 36·26	−0 34·350	4	......	...	11	*t*
	6 44 36·46	......	...	− 1 28·88	2	11	
	6 23 36·26	−1 1·502	4	......	...	12	*t*
	6 50 2·67	......	...	+ 3 59·82	2	12	
	6 23 36·26	−2 20·278	4	......	...	13	*t*
	7 0 22·20	......	...	+10 54·81	3	13	
9	7 2 3·47	+2 31·153	2	......	...	13	*t*
	7 30 53·78	+2 36·305	1	......	...	13	*t*
	7 43 20·78	......	...	+ 6 47·17	3	13	
	8 2 31·62	+2 42·029	5	......	...	13	*t*
	8 19 33·00	......	...	+ 6 39·63	2	13	
10	7 11 44·27	......	...	− 3 6·40	2	14	
	7 30 39·76	−0 27·602	1	......	...	14	*t*
11	6 36 25·27	+0 44·368	3	......	...	15	*t*
	7 0 34·48	......	...	+ 5 37·06	4	15	
	7 21 27·38	+0 50·129	4	......	...	15	*t*
	8 12 59·09	......	...	+ 5 20·65	4	15	
	8 32 5·06	+0 58·440	4	......	...	15	*t*
	6 36 25·27	−1 37·933	3	......	...	16	*t*
	7 0 34·48	......	...	+ 1 2·07	4	16	
	7 21 27·38	−1 32·201	4	......	...	16	*t*
	8 12 59·09	......	...	+ 0 45·13	4	16	
	8 32 5·06	−1 23·953	4	......	...	16	*t*
12	6 41 44·35	......	...	+ 1 20·44	6	17	
	6 54 57·74	−0 1·429	8	......	...	17	*d*
	7 2 55·05	−0 0·686	9	......	...	17	*d*
	7 15 7·60	......	...	+ 1 14·82	9	17	
	7 36 9·97	+0 2·506	14	......	...	17	*d*
	8 10 38·13	......	...	+ 1 5·85	5	17	
	8 19 36·27	+0 6·752	5	......	...	17	*d*

May 9. Angle of position of comet's tail, 121° 30′. Nucleus remarkably bright.
10. Clouded after these observations.
11. Angle of position of comet's tail, 115° 40′. Nucleus less bright; halo round the head more diffused.
12. Angle of position of comet's tail, 117° 30′.

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1853.	Cape Mean Time.	Difference in R.A.	No. of Obs. in R.A.	Difference in N.P.D.	No. of Obs. in N.P.D.	No. of Star.	
	h m s	m s		′ ″			
May 14	7 27 56·82	......	...	− 5 52·53	3	17	
	8 4 32·88	+4 28·769	5	......	...	17	*t*
	8 42 50·40	......	...	− 6 6·18	5	17	
15	6 32 58·31	......	...	+ 3 34·95	5	18	
	6 49 34·79	−0 37·701	5	......	...	18	*t*
	7 7 42·58	−0 34·606	5	......	...	18	*d*
	7 24 52·76	......	...	+ 3 27·48	5	18	
	7 40 2·46	−0 32·717	5	......	...	18	*d*
	7 49 22·93	......	...	+ 3 22·71	5	18	
	8 0 34·68	−0 31·393	5	......	...	18	*d*
	8 11 40·64	......	...	+ 3 20·37	5	18	
16	6 20 43·76	......	...	+ 7 42·41	5	19	
	6 32 35·81	−0 26·035	5	......	...	19	*d*
	6 40 49·26	......	...	+ 7 38·85	5	19	
	6 53 34·76	−0 24·743	5	......	...	19	*d*
	7 3 28·35	......	...	+ 7 37·75	5	19	
	7 14 24·55	−0 23·516	5	......	...	19	*d*
	7 21 15·63	......	...	+ 7 33·79	5	19	
	7 37 17·40	−0 21·992	5	......	...	19	*d*
	7 49 10·05	......	...	+ 7 28·26	5	19	
	7 57 44·84	−0 20·916	5	......	...	19	*d*
	8 21 20·18	......	...	+ 7 23·12	5	19	
17	6 15 6·14	−0 16·685	5	......	...	20	*d*
	6 16 0·00	−0 21·075	5	......	...	21	*d*
	6 58 51·77	......	...	− 7 56·53	5	20	
	7 5 4·55	......	...	+ 3 26·32	5	21	
	7 16 43·34	−0 13·617	5	......	...	20	*d*
	7 18 12·00	−0 18·014	5	......	...	21	*d*
	7 28 54·65	......	...	− 8 0·03	5	20	
	7 34 51·87	......	...	+ 3 26·51	5	21	
	7 47 36·38	−0 12·086	5	......	...	20	*d*
	7 48 38·21	−0 16·387	5	......	...	21	*d*
	8 4 19·63	......	...	− 8 0·31	...	20	
	8 9 58·11	......	...	+ 3 17·34	5	21	
20	6 42 20·46	+0 12·428	5	......	...	22	*d*

May 14. Angle of position of comet's tail, 118°. Clouds.
15. Angle of position of comet's tail, 117° 35′.
17. Angle of position of comet's tail, 118° 45′.
20. The comet is faint, partly owing to moonlight. The tail barely distinguishable.

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1853.	Cape Mean Time.	Difference in R.A.	No. of Obs. in R.A.	Difference in N.P.D.	No. of Obs. in N.P.D.	No. of Star.	
	h m s	m s		′ ″			
May 20	6 49 23·50	....	...	− 0 48·61	5	22	
	6 55 1·77	+0 11·957	5	......	...	22	*d*
	7 2 55·48	......	...	− 0 51·63	5	22	
	7 8 59·68	+0 11·303	5	......	...	22	*d*
	7 15 43·57	......	...	− 0 50·25	5	22	
	7 21 17·66	+0 10·887	5	......	...	22	*d*
21	6 41 26·83	......	...	+ 6 3·15	5	23	
	6 49 47·26	−0 14·373	5	......	...	23	*d*
	6 55 44·28	......	...	+ 6 3·05	5	23	
	7 2 29·57	−0 14·653	5	......	...	23	*d*
	7 9 28·82	......	...	+ 6 1·23	5	23	
23	6 35 26·93	......	...	+ 7 51·42	5	24	
	6 48 36·57	−0 2·714	5	......	...	24	*d*
	7 0 21·44	−0 2·586	5	......	...	24	*d*
	7 9 41·51	−0 2·157	5	......	...	24	*d*
	7 18 44·82	......	...	+ 7 41·29	5	24	
28	6 27 55·21	......	...	+ 4 55·45	5	25	
	6 45 59·48	−0 30·305	5	......	...	25	*d*
	6 56 48·34	−0 30·334	5	......	...	25	*d*
	7 6 1·61	......	...	+ 4 51·97	5	25	
29	6 13 20·56	−0 6·578	5	......	...	25	*d*
	6 20 29·69	......	...	+ 2 32·30	5	25	
	6 29 17·02	−0 6·249	5	......	...	25	*d*
	6 35 10·81	......	...	+ 2 30·40	5	25	
	6 40 52·64	−0 5·963	5	......	...	...	*d*
31	6 24 32·60	+0 37·004	5	......	...	25	*d*
	6 31 0·12	.....	...	− 2 5·16	5	25	
	6 37 46·37	+0 36·985	5	......	...	25	*d*
	6 46 57·97	......	...	− 2 9·65	5	25	
	6 54 6·78	+0 36·935	5	......	...	25	*d*
June 1	6 27 12·98	......	...	+10 2·01	5	26	
	6 34 57·26	−0 47·934	5	......	...	26	*d*
	6 41 52·68	......	...	+ 9 58·94	5	26	
	6 50 17·87	−0 47·377	5	......	...	26	*d*
	7 14 34·44	−0 48·083	3	......	...	26	*d*

May 23. Thin clouds. The comet is very indistinct.
29. The comet is very faint.
June 1. The measurements diminish in precision, owing to the faintness of the comet.

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1853.	Cape Mean Time.	Difference in R.A.	No. of Obs. in R.A.	Difference in N.P.D.	No. of Obs. in N.P.D.	No. of Star.	
	h m s	m s		′ ″			
June 1	7 14 34·44	+1 0·237	3	......	...	25	*t*
	7 24 49·65	......	...	− 4 23·62	5	25	
2	6 27 25·54	+1 18·965	3	......	...	25	*t*
	6 45 16·64	......	...	−6 26·94	4	25	
	7 1 22·02	+1 19·253	2	......	...	25	*t*
	6 27 25·54	−1 24·261	3	......	...	27	*t*
	6 45 16·64	......	...	−2 53·07	4	27	
	7 1 22·02	−1 23·896	2	......	...	27	*t*
3	6 36 53·39	......	...	+5 54·40	5	26	
	6 45 8·39	−0 11·407	5	......	...	26	*d*
	6 52 20·58	......	...	+5 53·80	5	26	
4	7 7 22·67	......	...	+3 53·75	1	26	
	7 13 12·69	−0 5·529	2	......	...	26	*d*
	7 25 19·64	......	...	+3 47·42	2	26	
5	6 34 48·27	......	...	+2 4·69	3	26	
	6 45 21·34	+0 21·519	5	......	...	26	*d*
	6 55 12·79	......	...	+2 3·91	3	26	
7	6 35 58·61	......	...	−1 22·35	3	26	
	6 47 3·93	+0 51·866	10	......	...	26	*d*
	6 58 43·86	......	...	−1 24·26	5	26	
	7 16 36·13	+0 54·550	10	......	...	26	*t*
	7 31 40·34	......	...	−1 26·34	2	26	
8	6 49 9·52	+1 8·199	5	......	...	26	*t*
	7 7 54·37	......	...	−2 59·49	10	26	
	7 26 44·26	+1 9·505	3	......	...	26	*t*
9	6 23 37·43	......	...	−4 22·13	5	26	
	6 38 11·42	+1 23·619	7	......	...	...	*t*
	6 56 13·48	......	...	−4 23·55	5	26	
10	6 23 48·76	......	...	−5 47·12	5	26	
	6 39 39·45	+1 38·681	5	......	...	26	*t*
	6 54 45·86	......	...	−5 48·28	5	26	
11	6 34 14·35	......	...	+4 51·74	5	28	
	6 45 47·37	−0 22·350	5	......	...	28	*d*
	6 55 0·64	......	...	+4 50·27	5	28	

June 3. The comet is very faint.
4. Generally clouded. These observations only could be obtained.
8. Hazy atmosphere. The measures very difficult.
10. The moonlight is now diminishing the visibility of the comet.

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Approximate Positions of the Stars compared with the Comet.

Reference Number.	R.A.	N.P.D.	Mag.	
	h m s	° ′ ″		
1	5 0 2	103 19 23	7	Preceded by a small star
2	5 57 29	104 4 54	7	H. C. No. 11551
3	5 57 51	104 1 37	8½	
4	5 58 10	104 6 51	8½	
5	6 11 52	104 18 18	10	
6	6 12 44	104 16 42	9	
7	6 14 32	104 14 30	8	
8	6 32 32	104 1 0	5	H. C. No. 12825
9	6 40 7	104 16 15	6	B. A. C. 2221
10	6 42 8	104 13 38	9?	
11	6 47 36	104 3 47	9½	
12	6 48 2	103 58 21	8	H. C. No. 13392
13	6 49 21	103 51 30	5½	B.A.C. No. 2273 : μ Canis Majoris
14	6 56 20	103 57 20	9	
15	6 58 15	103 45 0	8½	
16	7 0 37	103 49 30	8	H. C. No. 13848
17	7 1 49	103 45 28	9	
18	7 8 37	103 32 48	8	
19	7 9 59	103 25 24	7?	
20	7 11 10	103 37 49	7½	H. C. No. 14228
21	7 11 14	103 30 18	8	
22	7 14 22	103 21 24	10	
23	7 14 46	103 11 35	10	
24	7 16 34	103 4 9	10	
25	7 19 45	102 53 48	7½	
26	7 21 35	102 39 30	9	Preceded by a faint star, nearly on the same parallel.
27	7 22 28	102 50 20	10	
28	7 23 50	102 28 50	10½	

Extract of a Letter from A. G. Constable, Esq. to the Astronomer Royal, dated Lima, June 1853.

"I extract from my journal, premising that the bearings, &c., I received from the captain of the ship (in which I was only a passenger from Melbourne to Callao), are correct.

"May 1, 1853. This evening, at 7 minutes to 7 p.m., observed a comet at an altitude of 20° 47′ 30″, bearing W. by S. ½ S., dis-